

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application;

--1. (Currently Amended) A decoding apparatus comprising:  
~~decoding~~ acquiring means for ~~decoding~~ acquiring encoded data in a method described by a first finite state transition diagram[[,]]; and

means for decoding the acquired encoded data by using a trellis corresponding to a second finite state transition diagram that is a combination of the first finite state transition diagram and intersymbol interference, said encoded data having been generated by encoding [[a]] an information series of information.

--2. (Currently Amended) The decoding apparatus according to claim 1, wherein the first finite state transition diagram accords with (2, 7) [[RLL]] run length limited code conversion rules.

--3. (Currently Amended) The decoding apparatus according to claim 1, wherein the first finite state transition diagram accords with (1, 7) [[RLL]] run length limited code conversion rules.

--4. (Original)The decoding apparatus according to claim

1, wherein the intersymbol interference is based on a partial-response equalization system.

--5. (Currently Amended) The decoding apparatus according to claim 1, in which the encoded data is further encoded into [[LDPC]] one of low density parity check (LDPC) codes [[or]] and turbo codes and said decoding means comprises first decoding means, and which further comprises second decoding means for receiving the information decoded by the first decoding means and decoding one of the LDPC codes [[or]] and turbo codes.

--6. (Currently Amended) The decoding apparatus according to claim 1, which further comprises reproducing means for reproducing the encoded data generated in the method described by the first finite state transition diagram, and in which the ~~first~~ decoding means uses the trellis corresponding to the second finite state transition diagram, thereby to decode the encoded data that the reproducing means has reproduced from a ~~predetermined~~ recording medium.

--7. (Currently Amended) The decoding apparatus according to claim 1, which further comprises receiving means for receiving the encoded data generated in the method described by the first finite state transition diagram and transmitted via a

predetermined communication path, and in which the ~~first~~ decoding means decodes the encoded data received by the receiving means[[,]] by using the trellis corresponding to the second finite state transition diagram.

--8. (Currently Amended) A decoding method comprising the steps of:

acquiring encoded data generated by encoding [[a]] an information series of information in a method described by a first finite state transition diagram; and

decoding the encoded data acquired[[,]] in the step of acquiring by using a trellis corresponding to a second finite state transition diagram that is a combination of the first finite state transition diagram and intersymbol interference.

--9. (Currently Amended) A program storage medium storing a computer-readable program that describes the steps of:

acquiring encoded data generated by encoding [[a]] an information series of information in a method described by a first finite state transition diagram; and

decoding the encoded data acquired[[,]] in said step of acquiring by using a trellis corresponding to a second finite state transition diagram that is a combination of the first finite state transition diagram and intersymbol interference.

--10. (Currently Amended) A program describing the steps of:

acquiring encoded data generated by encoding [[a]] an information series of information in a method described by a first finite state transition diagram; and

decoding the encoded data acquired~~[[,]]~~ in said step of acquiring by using a trellis corresponding to a second finite state transition diagram that is a combination of the first finite state transition diagram and intersymbol interference.

--11. (Currently Amended) A recording/reproducing apparatus comprising:

encoding means for encoding [[a]] an information series of information in a method described by a first finite state transition diagram;

recording/reproducing means for recording and reproducing data encoded by the encoding means, in and from a ~~predetermined~~ recording medium; and

decoding means for decoding the encoded data reproduced by the recording/reproducing means~~[[,]]~~ by using a trellis corresponding to a second finite state transition diagram that is a combination of the first finite state transition diagram and intersymbol interference.